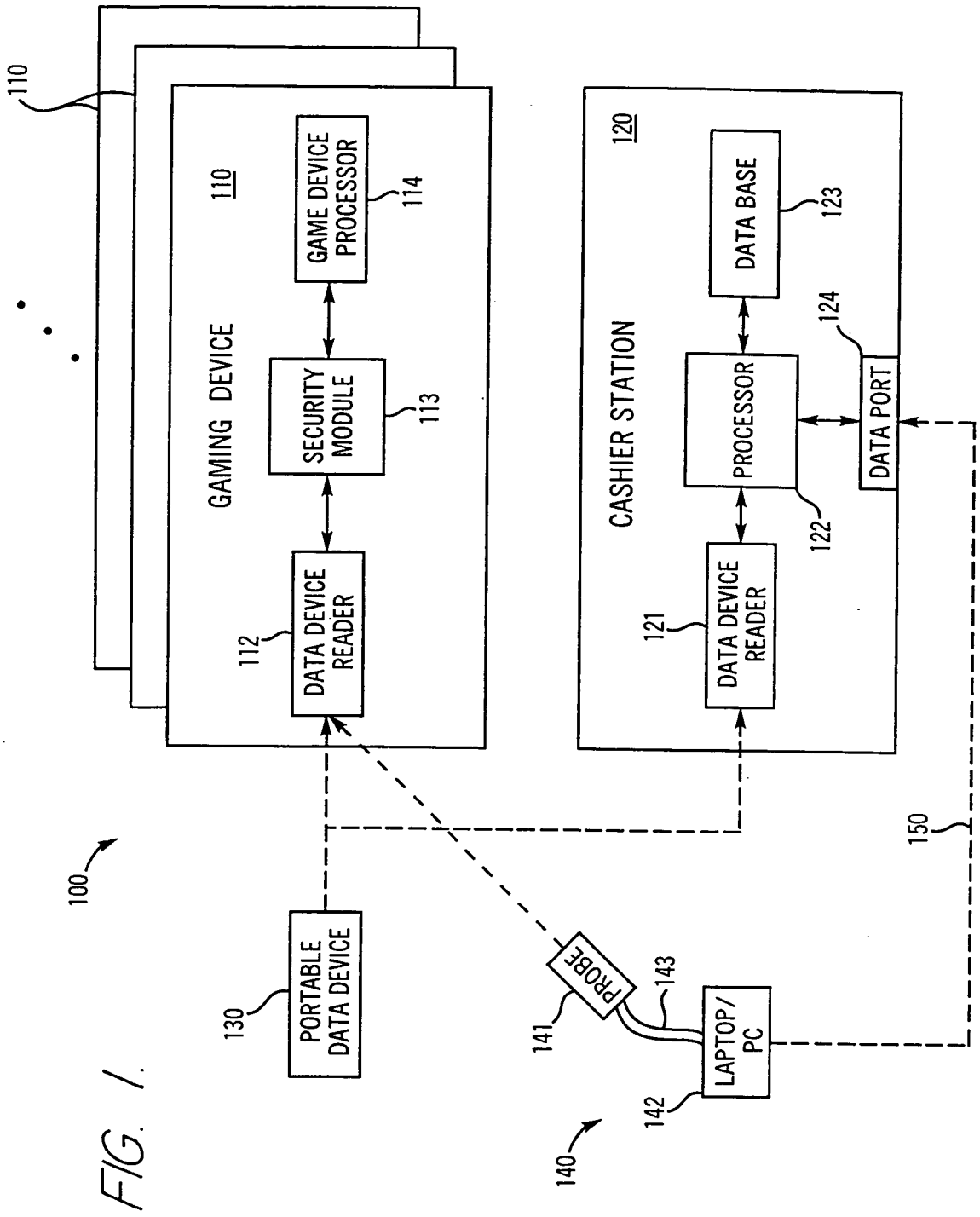

110
GAMING DEVICE
110
GAME DEVICE PROCESSOR
114
SECURITY MODULE
113
DATA DEVICE READER
112
CASHIER STATION
120
DATA BASE
123
PROCESSOR
122
DATA PORT
124
DATA DEVICE READER
121
100
PORTABLE DATA DEVICE
130
PROBE
141
143
LAPTOP/ PC
142
140
150

FIG. 1.

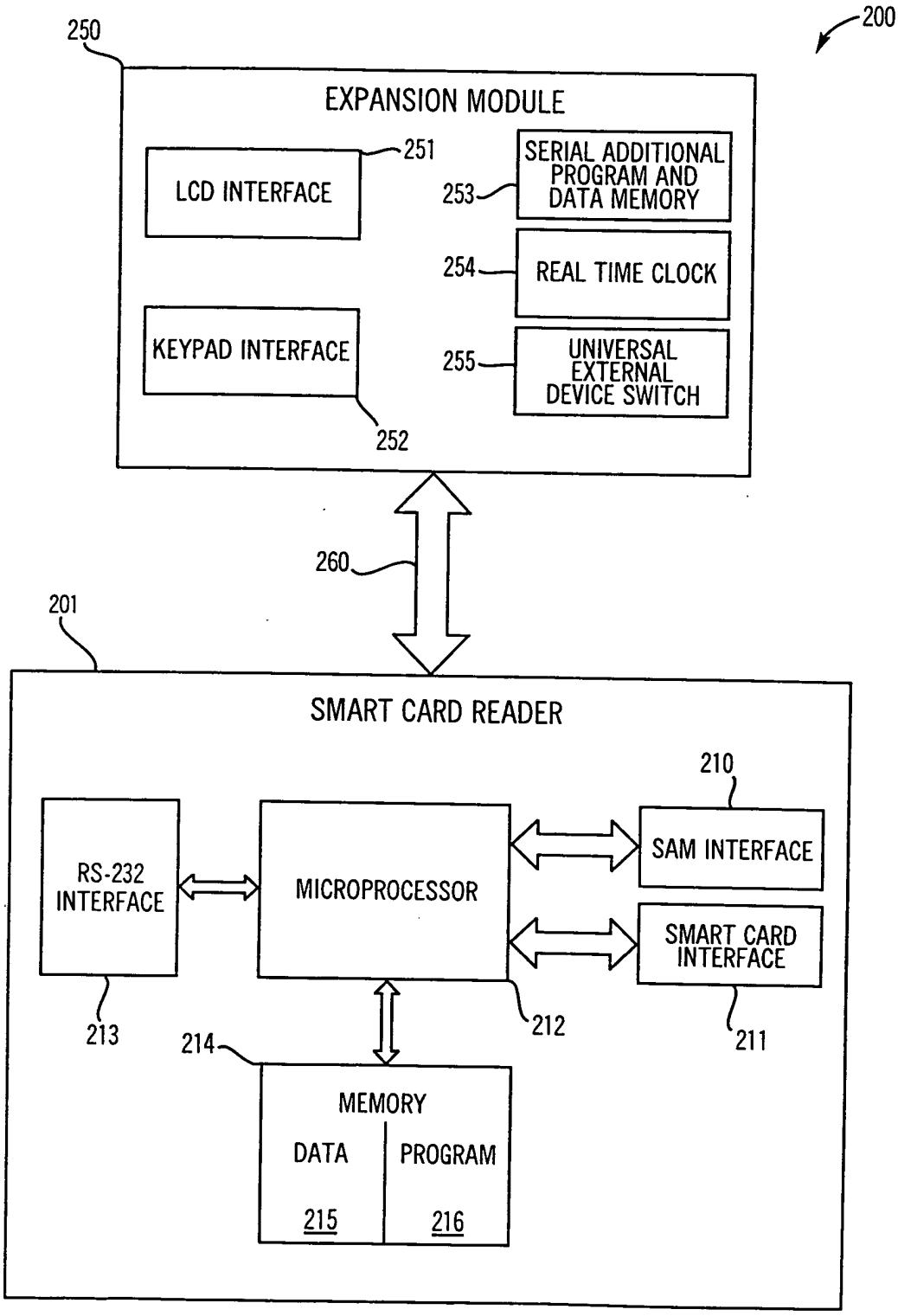

200
250
EXPANSION MODULE
LCD INTERFACE
251
SERIAL ADDITIONAL PROGRAM AND DATA MEMORY
253
REAL TIME CLOCK
254
KEYPAD INTERFACE
252
UNIVERSAL EXTERNAL DEVICE SWITCH
255
260
201
SMART CARD READER
210
RS-232 INTERFACE
MICROPROCESSOR
SAM INTERFACE
SMART CARD INTERFACE
213
212
211
214
MEMORY
DATA
PROGRAM
215
216

FIG. 2.

FIG. 3.

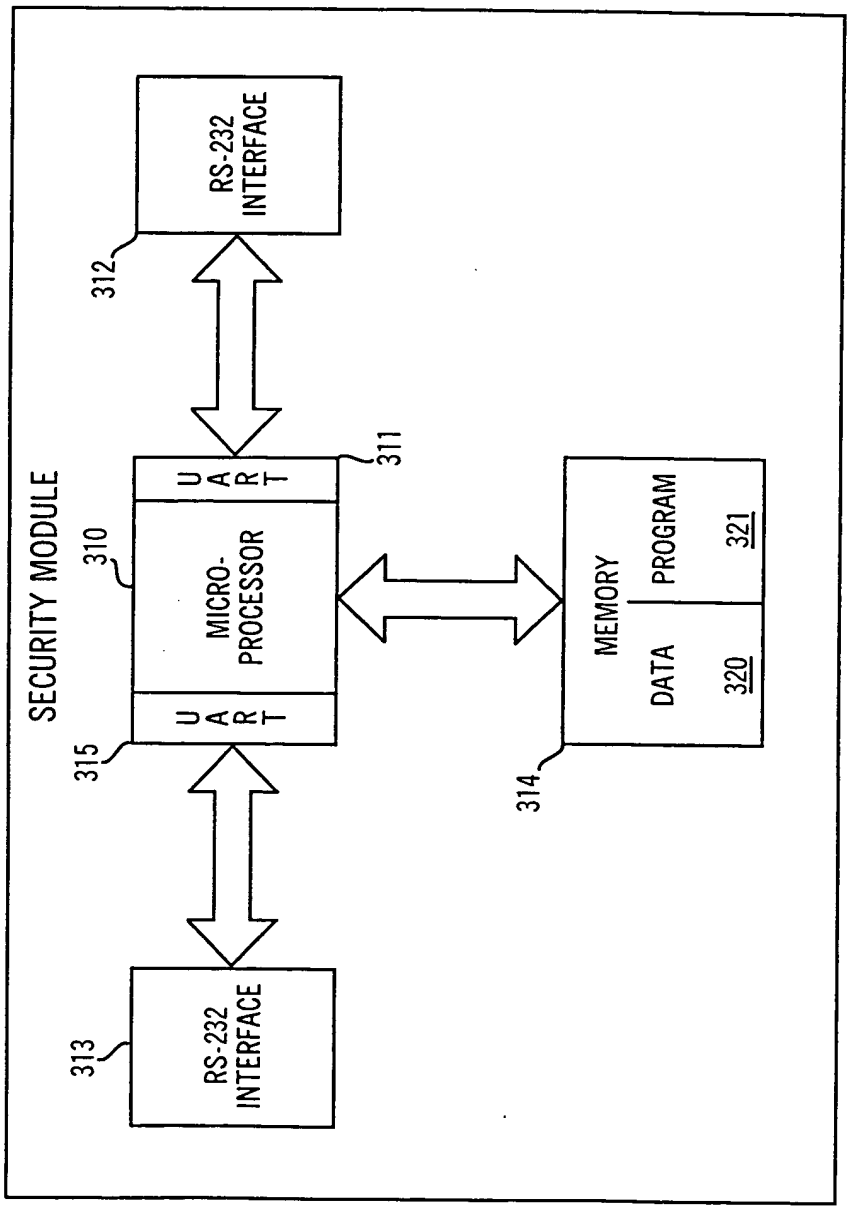

300
SECURITY MODULE
RS-232 INTERFACE
312
U A R T
311
MICRO-PROCESSOR
310
U A R T
315
RS-232 INTERFACE
313
MEMORY
DATA
320
PROGRAM
321
314

FIG. 4.

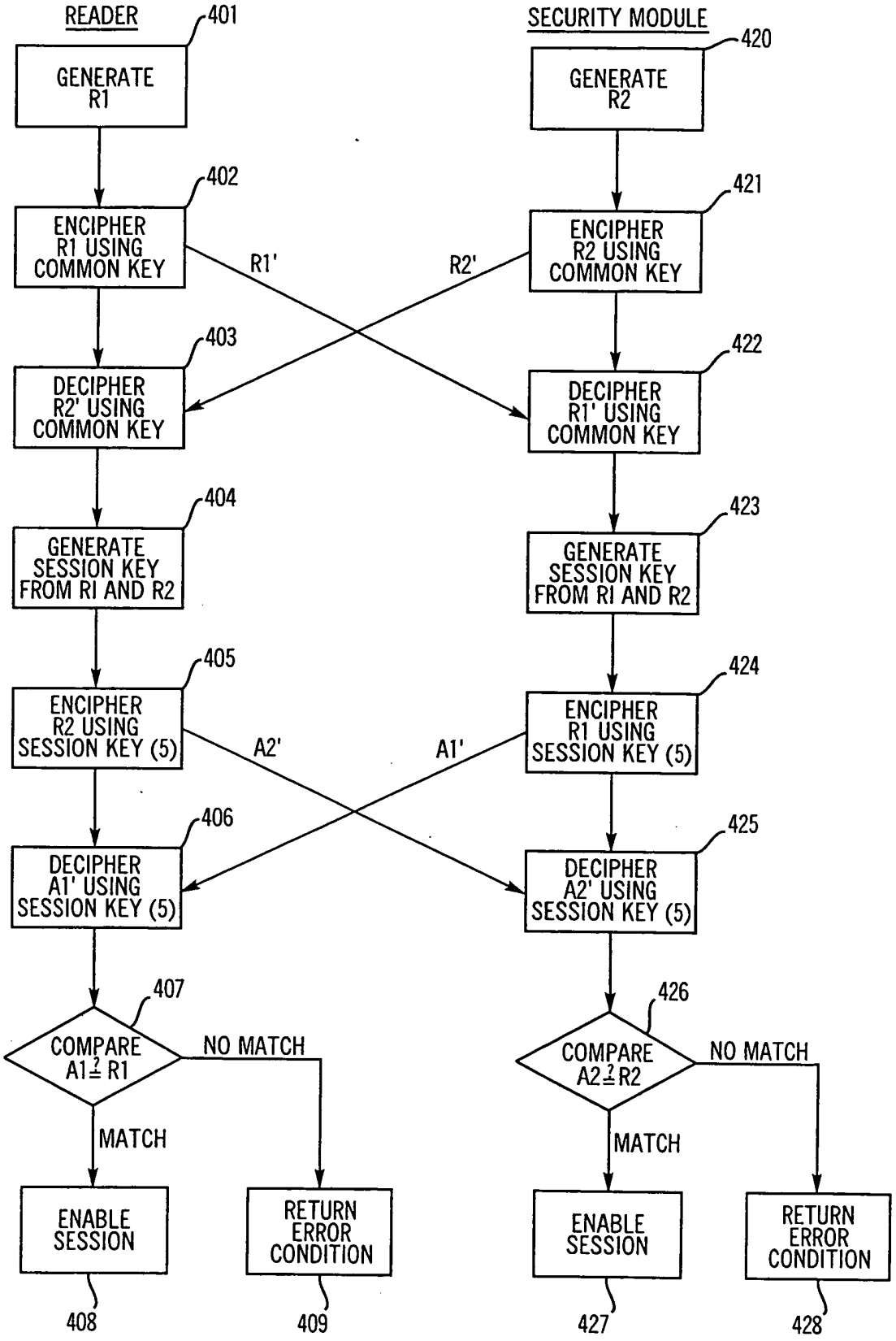
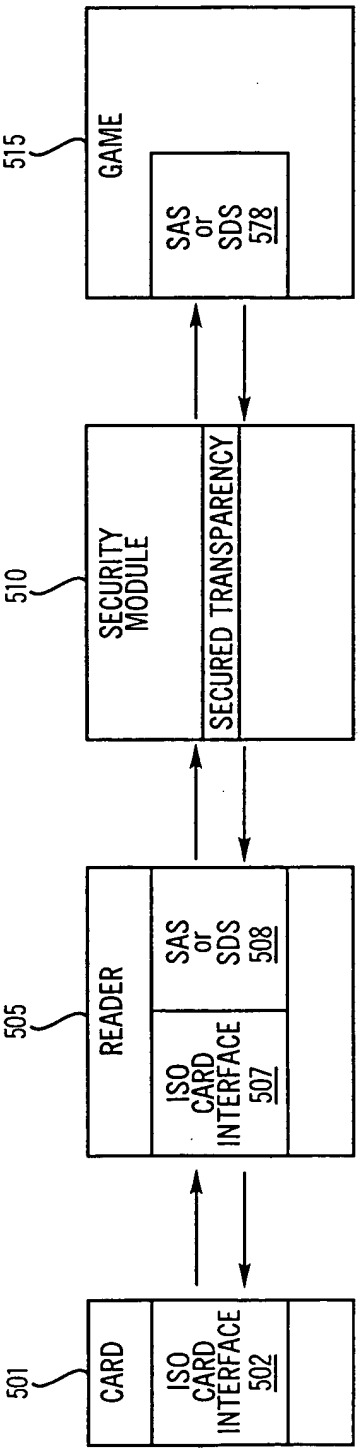

READER
401
GENERATE R1
402
ENCIPHER R1 USING COMMON KEY
R1'
403
DECIPHER R2' USING COMMON KEY
404
GENERATE SESSION KEY FROM RI AND R2
405
ENCIPHER R2 USING SESSION KEY (5)
A2'
406
DECIPHER A1' USING SESSION KEY (5)
407
COMPARE A1 ? R1
NO MATCH
MATCH
ENABLE SESSION
408
RETURN ERROR CONDITION
409
SECURITY MODULE
420
GENERATE R2
421
ENCIPHER R2 USING COMMON KEY
R2'
422
DECIPHER R1' USING COMMON KEY
423
GENERATE SESSION KEY FROM RI AND R2
424
ENCIPHER R1 USING SESSION KEY (5)
A1'
425
DECIPHER A2' USING SESSION KEY (5)
426
COMPARE A2 ? R2
NO MATCH
MATCH
ENABLE SESSION
427
RETURN ERROR CONDITION
428

FIG. 5.


500
501
CARD
ISO CARD INTERFACE 502
505
READER
ISO CARD INTERFACE 507
SAS or SDS 508
510
SECURITY MODULE
SECURED TRANSPARENCY
515
GAME
SAS or SDS 578

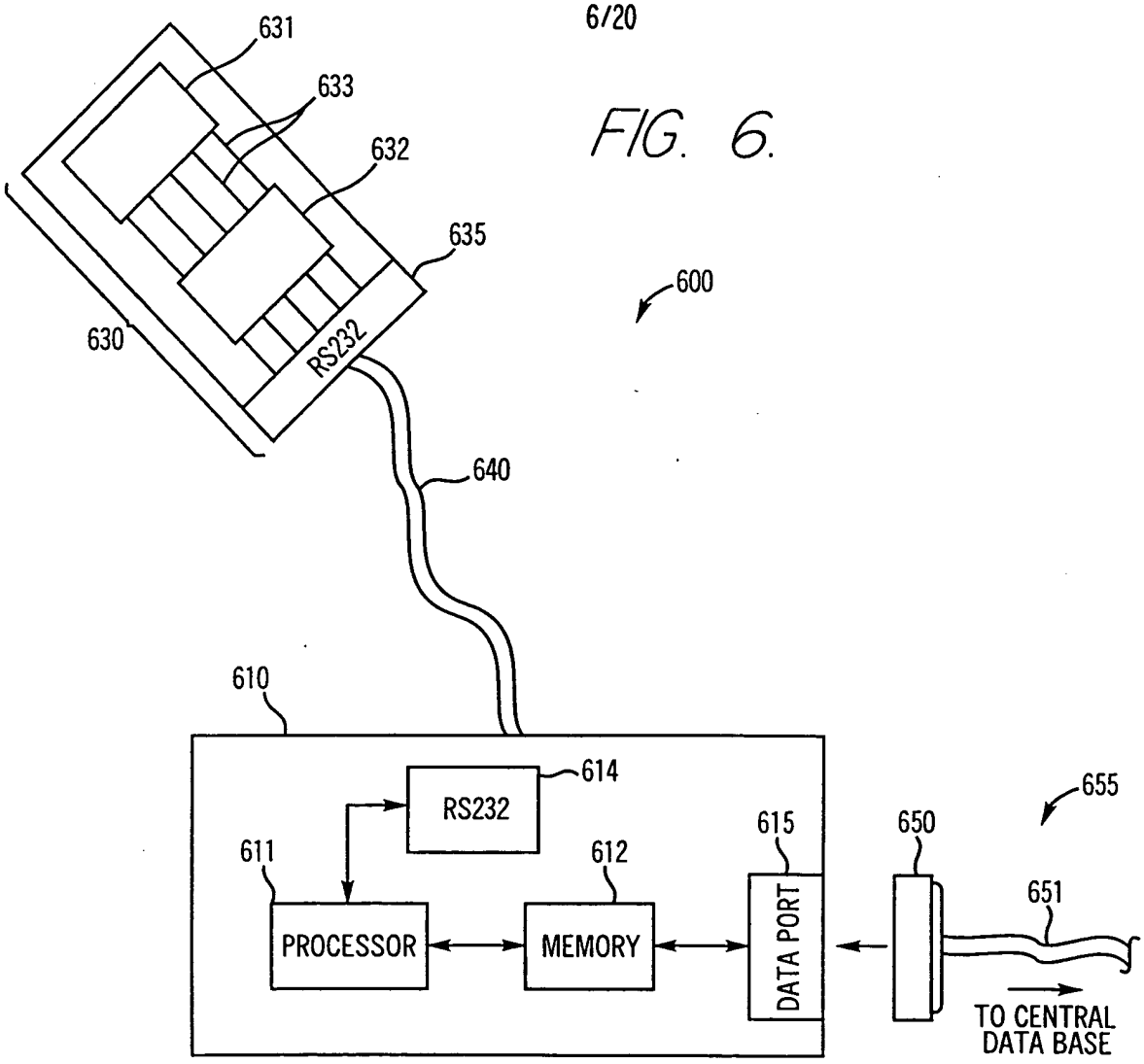
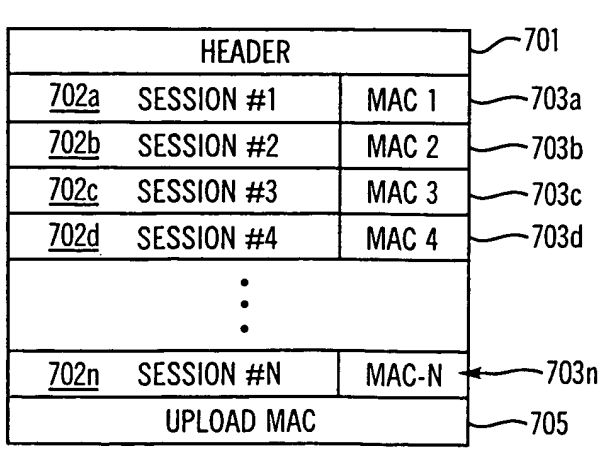


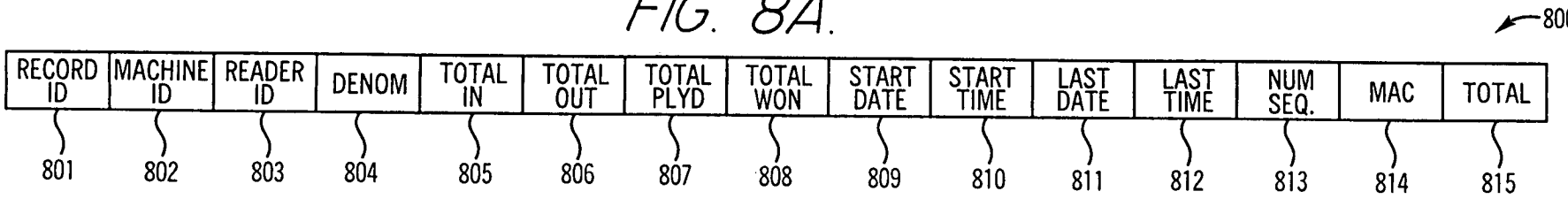
FIG. 6.

FIG. 7.



TRANSACTION LIST
RECORD FORMAT

FIG. 8A.



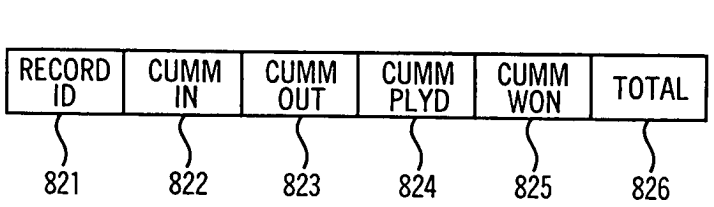
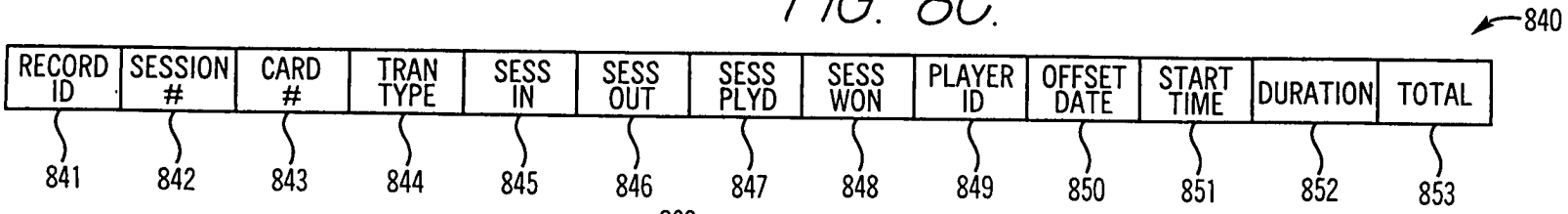


FIG. 8B.

FIG. 8C.



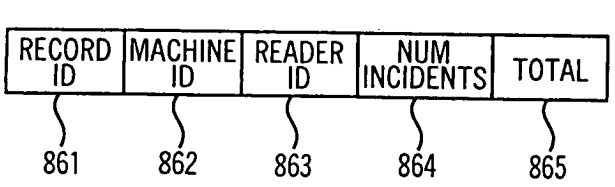


FIG. 8D.

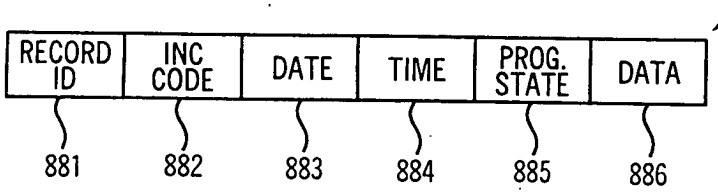


FIG. 8E.

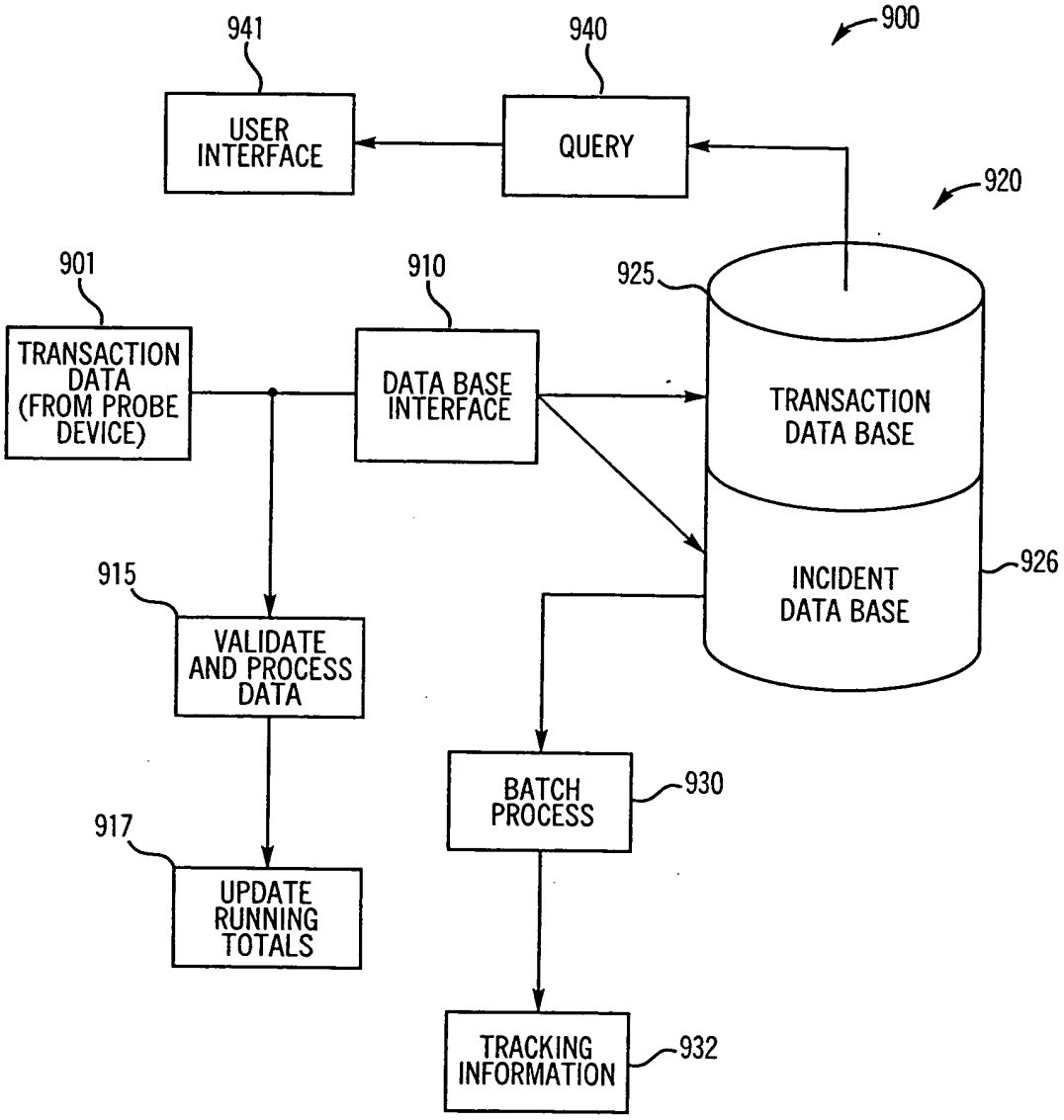

900
941
940
USER INTERFACE
QUERY
920
901
910
925
TRANSACTION DATA (FROM PROBE DEVICE)
DATA BASE INTERFACE
TRANSACTION DATA BASE
INCIDENT DATA BASE
926
915
VALIDATE AND PROCESS DATA
917
UPDATE RUNNING TOTALS
BATCH PROCESS
930
TRACKING INFORMATION
932

FIG. 9.

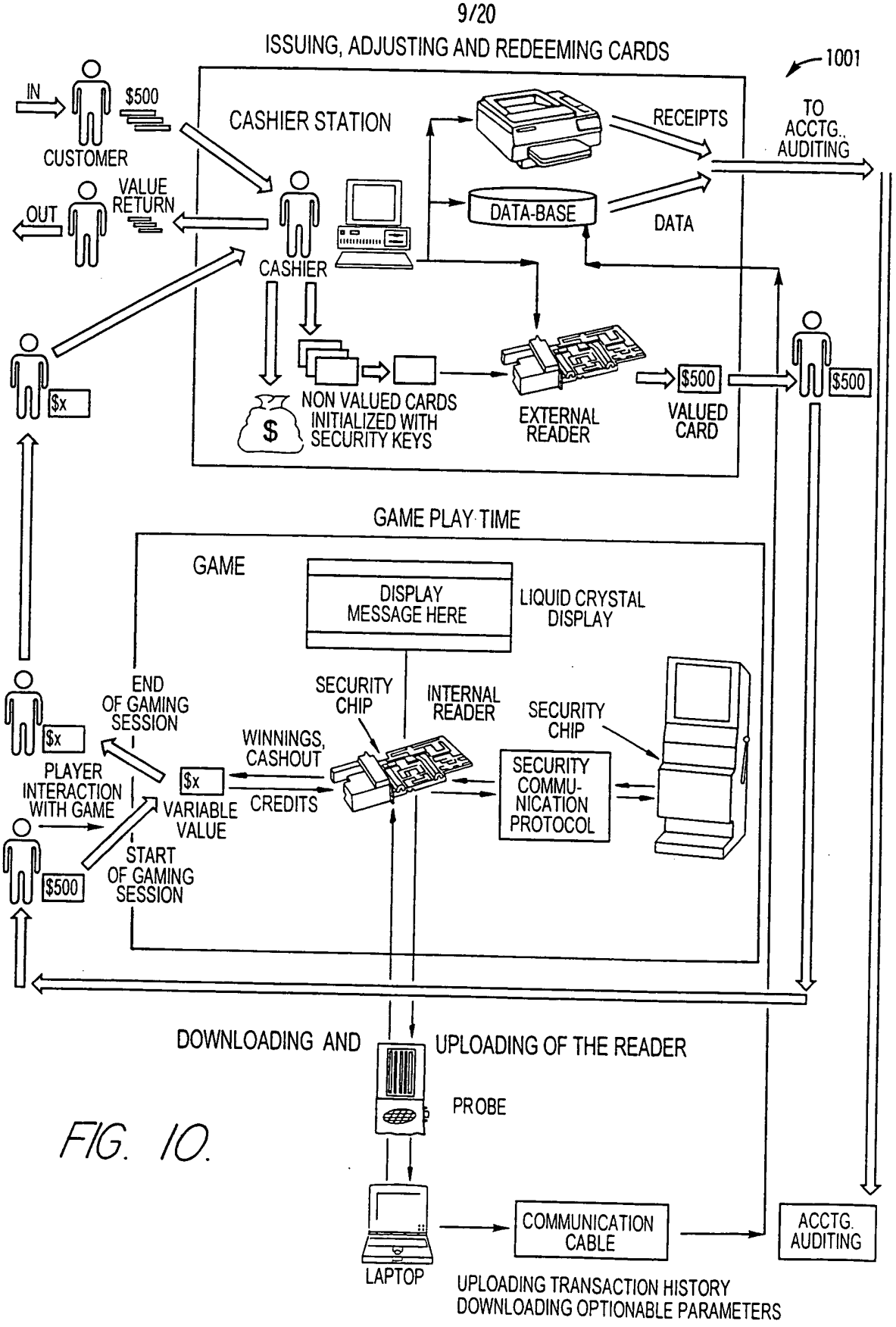

ISSUING, ADJUSTING AND REDEEMING CARDS
1001
IN
$500
CUSTOMER
CASHIER STATION
RECEIPTS
TO ACCTG., AUDITING
OUT
VALUE RETURN
CASHIER
DATA-BASE
DATA
$x
NON VALUED CARDS INITIALIZED WITH SECURITY KEYS
EXTERNAL READER
$500
VALUED CARD
$500
GAME PLAY TIME
GAME
DISPLAY MESSAGE HERE
LIQUID CRYSTAL DISPLAY
END OF GAMING SESSION
SECURITY CHIP
INTERNAL READER
SECURITY CHIP
$x
WINNINGS, CASHOUT
PLAYER INTERACTION WITH GAME
$x
CREDITS
VARIABLE VALUE
SECURITY COMMU-NICATION PROTOCOL
$500
START OF GAMING SESSION
DOWNLOADING AND
UPLOADING OF THE READER
PROBE
COMMUNICATION CABLE
ACCTG. AUDITING
LAPTOP
UPLOADING TRANSACTION HISTORY
DOWNLOADING OPTIONABLE PARAMETERS

FIG. 10.

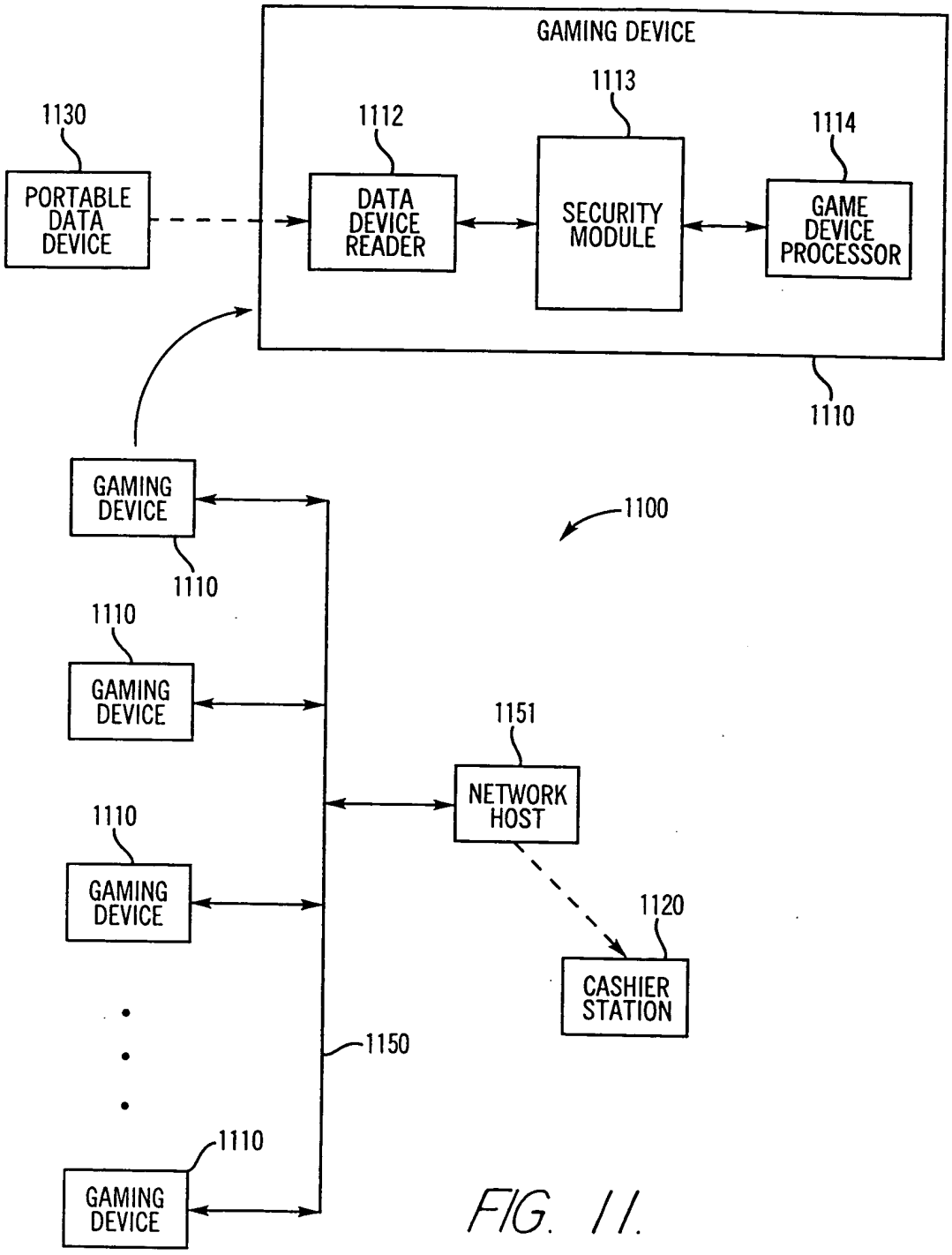

GAMING DEVICE
1113
1130
1112
1114
PORTABLE DATA DEVICE
DATA DEVICE READER
SECURITY MODULE
GAME DEVICE PROCESSOR
1110
GAMING DEVICE
1100
1110
1110
GAMING DEVICE
1151
NETWORK HOST
1110
GAMING DEVICE
1120
CASHIER STATION
1150
1110
GAMING DEVICE

FIG. 11.

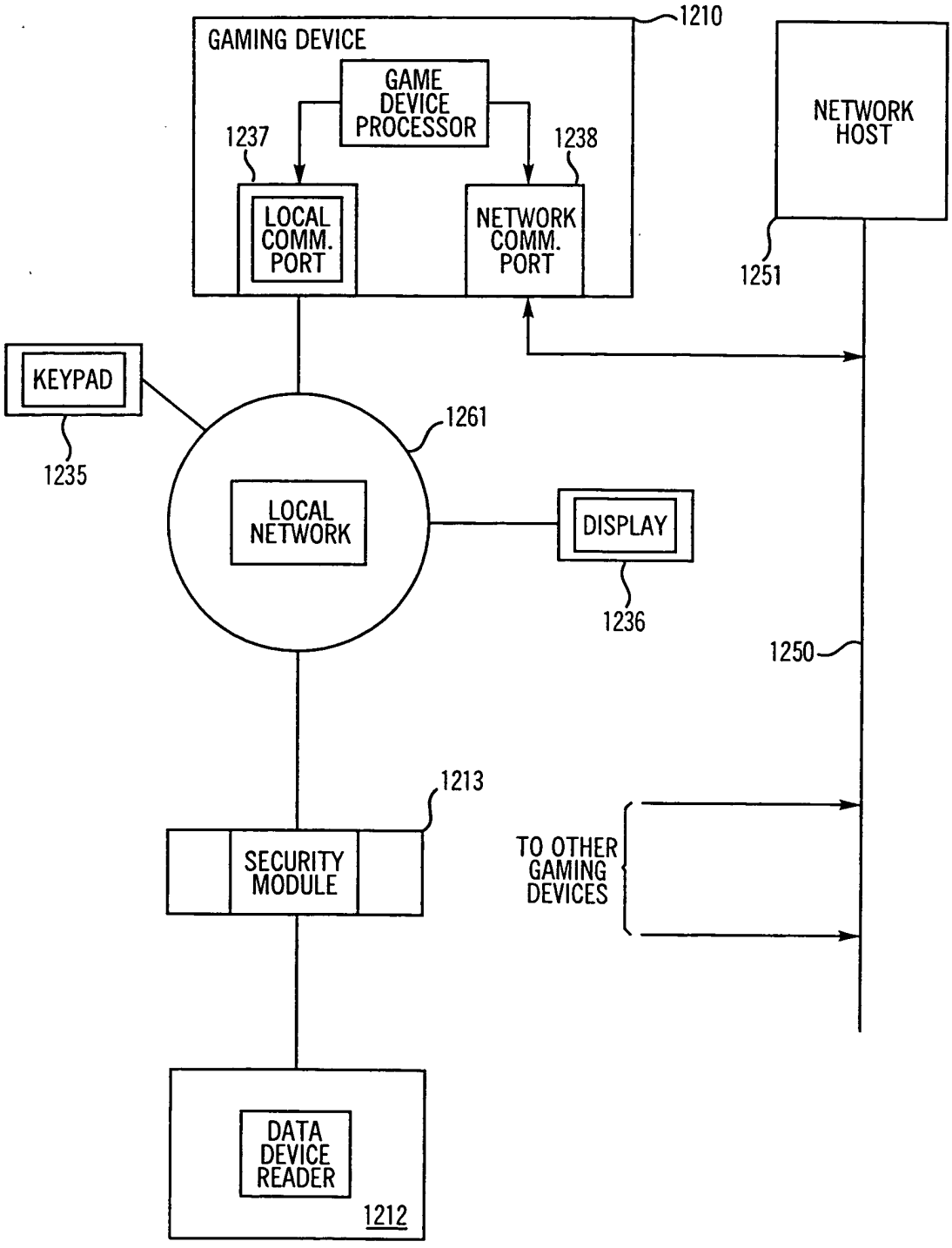

GAMING DEVICE
1210
GAME DEVICE PROCESSOR
1237
1238
LOCAL COMM. PORT
NETWORK COMM. PORT
NETWORK HOST
1251
KEYPAD
1235
1261
LOCAL NETWORK
DISPLAY
1236
1250
1213
SECURITY MODULE
TO OTHER GAMING DEVICES
DATA DEVICE READER
1212

FIG. 12.

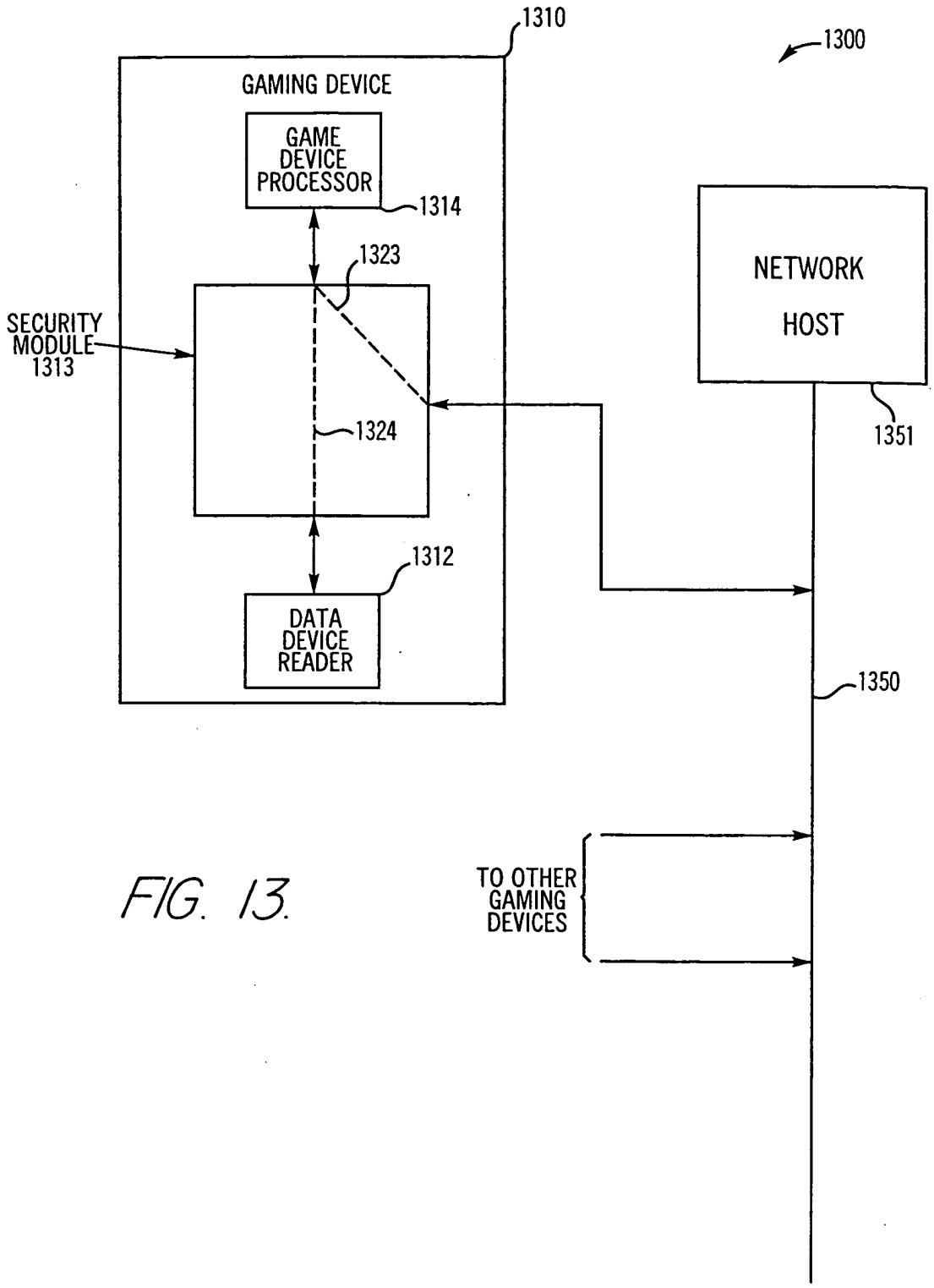

1310
1300
GAMING DEVICE
GAME DEVICE PROCESSOR
1314
1323
SECURITY MODULE 1313
1324
NETWORK HOST
1351
1312
DATA DEVICE READER
1350
TO OTHER GAMING DEVICES

FIG. 13.

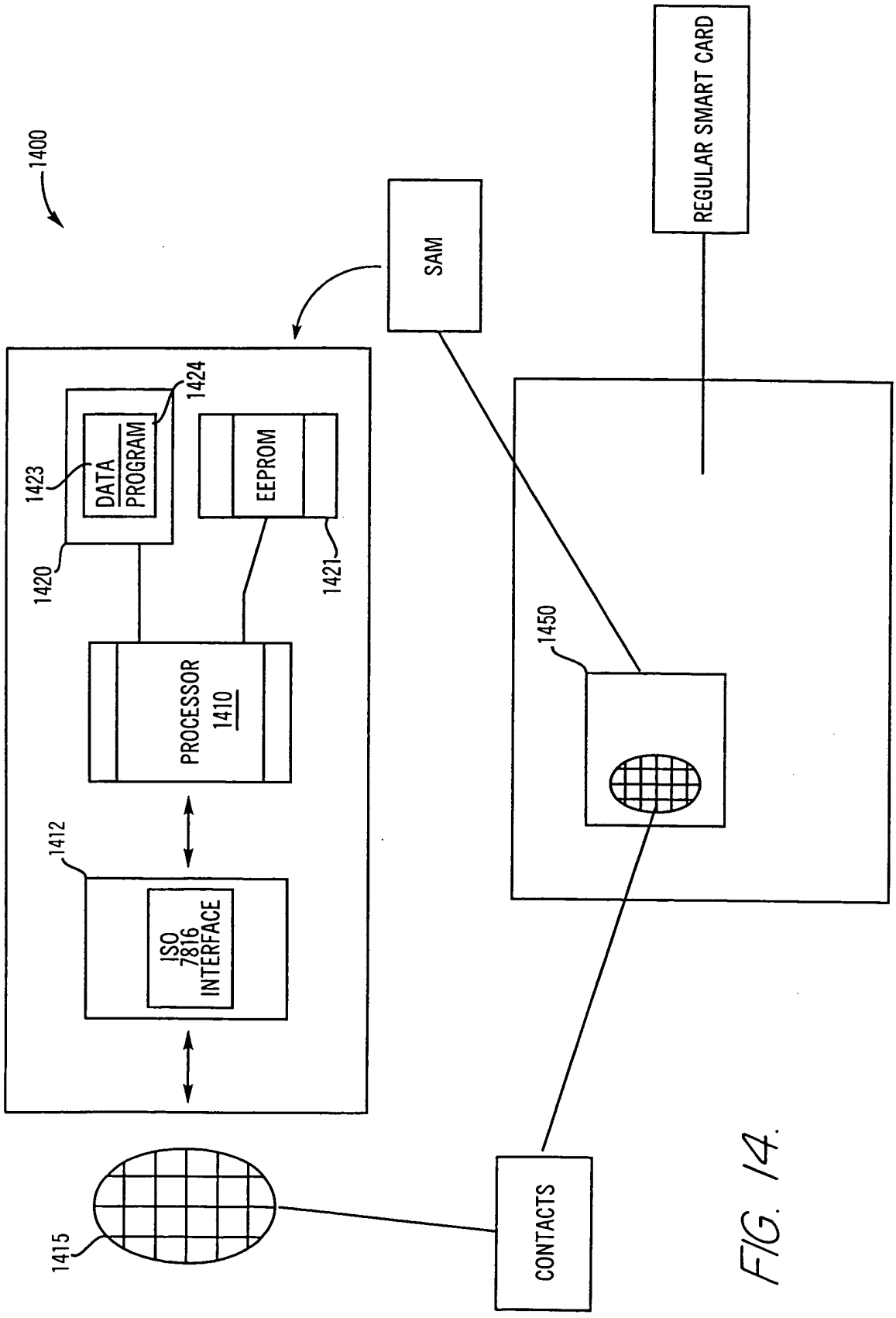
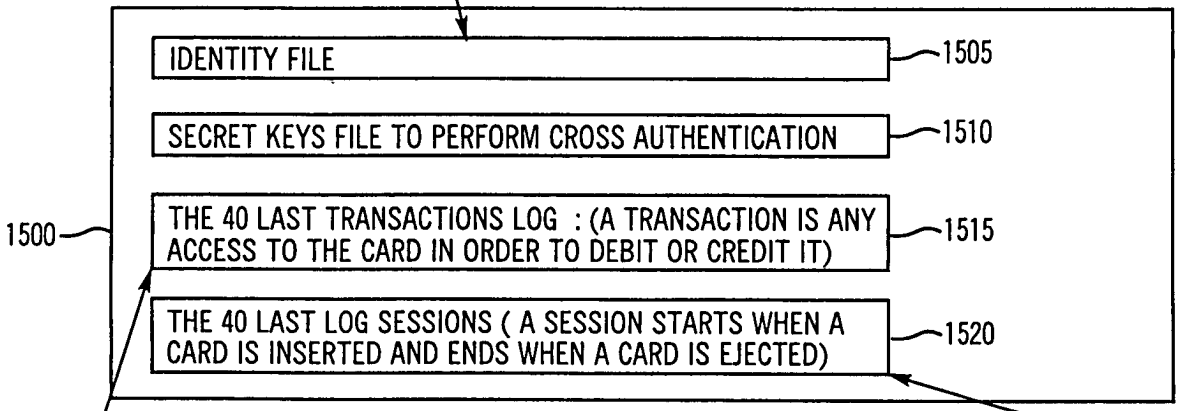

1400
SAM
REGULAR SMART CARD
1424
1423
DATA
PROGRAM
EEPROM
1420
1421
PROCESSOR
1410
1412
ISO
7816
INTERFACE
1450
1415
CONTACTS

FIG. 14.

USER CARD MAPPING

	PLAYER	ISSUE	EXP.	TITLE	LAST	MIDDLE	FIRST	RETAIN	CARD	CASINO	LANGUAGE
FIELD	ID	DATE	DATE		NAME	INITIAL	NAME	VALUE	NUM	ID	ID
CODE	BCD	DATE	DATE	ASC	ASC	ASC	ASC	HEX	BCD	BCD	HEX
	0--	YY-MM-	YY-MM-								
FORMAT	999999	DD	DD								
BYTES	3	3	3	3	20	1	20	4	4	4	1

FIG. 15.



	SESSION	MACHINE	TRANSACT	CARD	CUMM.	CUMM.	CUMM.
FIELD	NUMBER	ID	TYPE	VALUE	OUT	PLAYED	WON
CODE	HEX	HEX	HEX	HEX	HEX	HEX	HEX
	0--						
FORMAT	9999						
BYTES	2	4	2	4	4	4	4

	SESSION	MACHINE	TRANSACT	CARD	CUMM.	CUMM.	CUMM.
FIELD	NUMBER	ID	TYPE	VALUE	OUT	PLAYED	WON
CODE	HEX	HEX	HEX	HEX	HEX	HEX	HEX
	0--						
FORMAT	9999						
BYTES	2	4	2	4	4	4	4

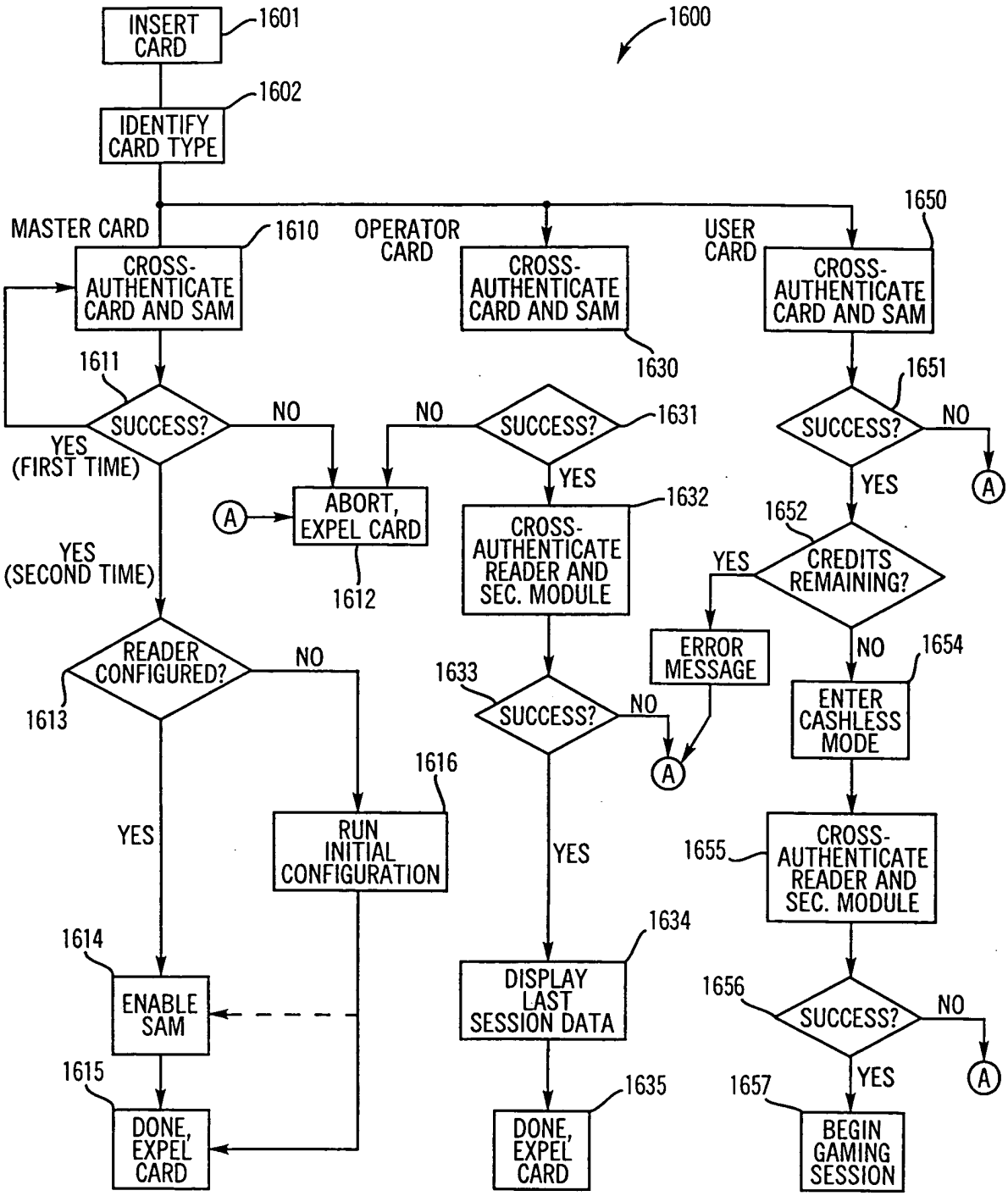

INSERT CARD
1601
1600
IDENTIFY CARD TYPE
1602
MASTER CARD
1610
OPERATOR CARD
USER CARD
1650
CROSS-AUTHENTICATE CARD AND SAM
CROSS-AUTHENTICATE CARD AND SAM
1630
CROSS-AUTHENTICATE CARD AND SAM
1611
SUCCESS?
NO
YES (FIRST TIME)
NO
SUCCESS?
1631
YES
1651
SUCCESS?
NO
YES
A
A
ABORT, EXPEL CARD
1612
1632
CROSS-AUTHENTICATE READER AND SEC. MODULE
1652
CREDITS REMAINING?
YES
YES (SECOND TIME)
READER CONFIGURED?
NO
1613
ERROR MESSAGE
NO
1654
1633
SUCCESS?
NO
ENTER CASHLESS MODE
A
1616
RUN INITIAL CONFIGURATION
YES
YES
1655
CROSS-AUTHENTICATE READER AND SEC. MODULE
1634
1614
ENABLE SAM
DISPLAY LAST SESSION DATA
1656
SUCCESS?
NO
1615
1635
YES
A
DONE, EXPEL CARD
DONE, EXPEL CARD
1657
BEGIN GAMING SESSION

FIG. 16.

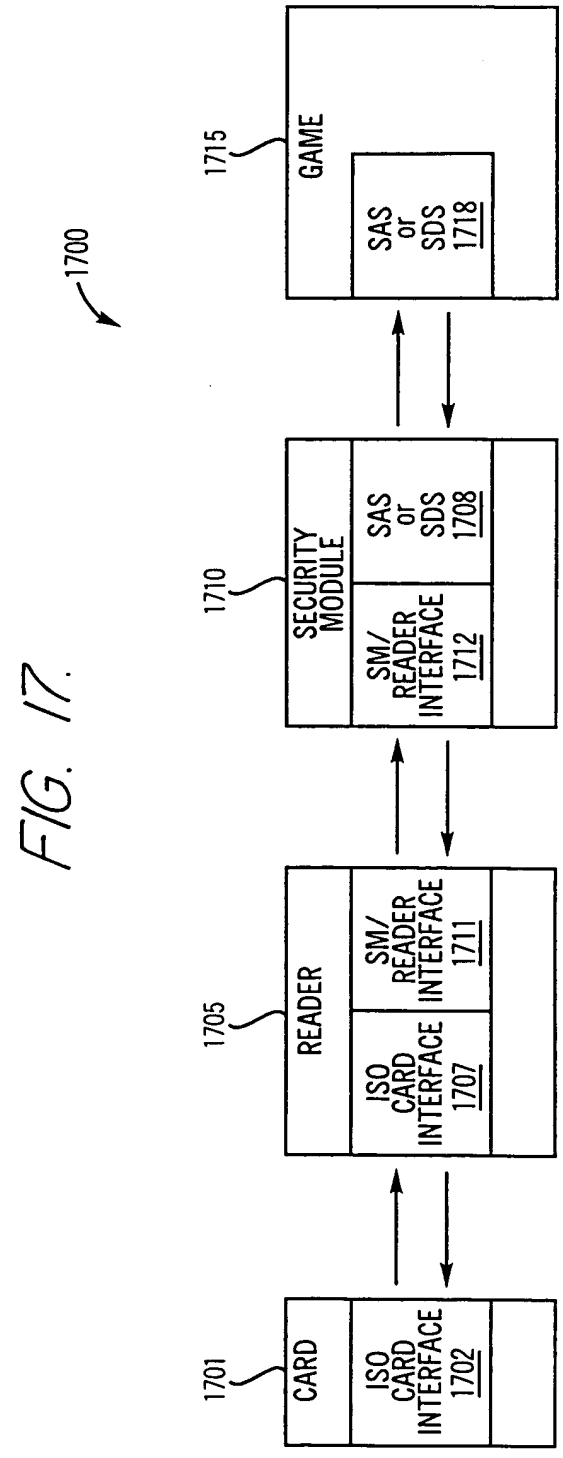
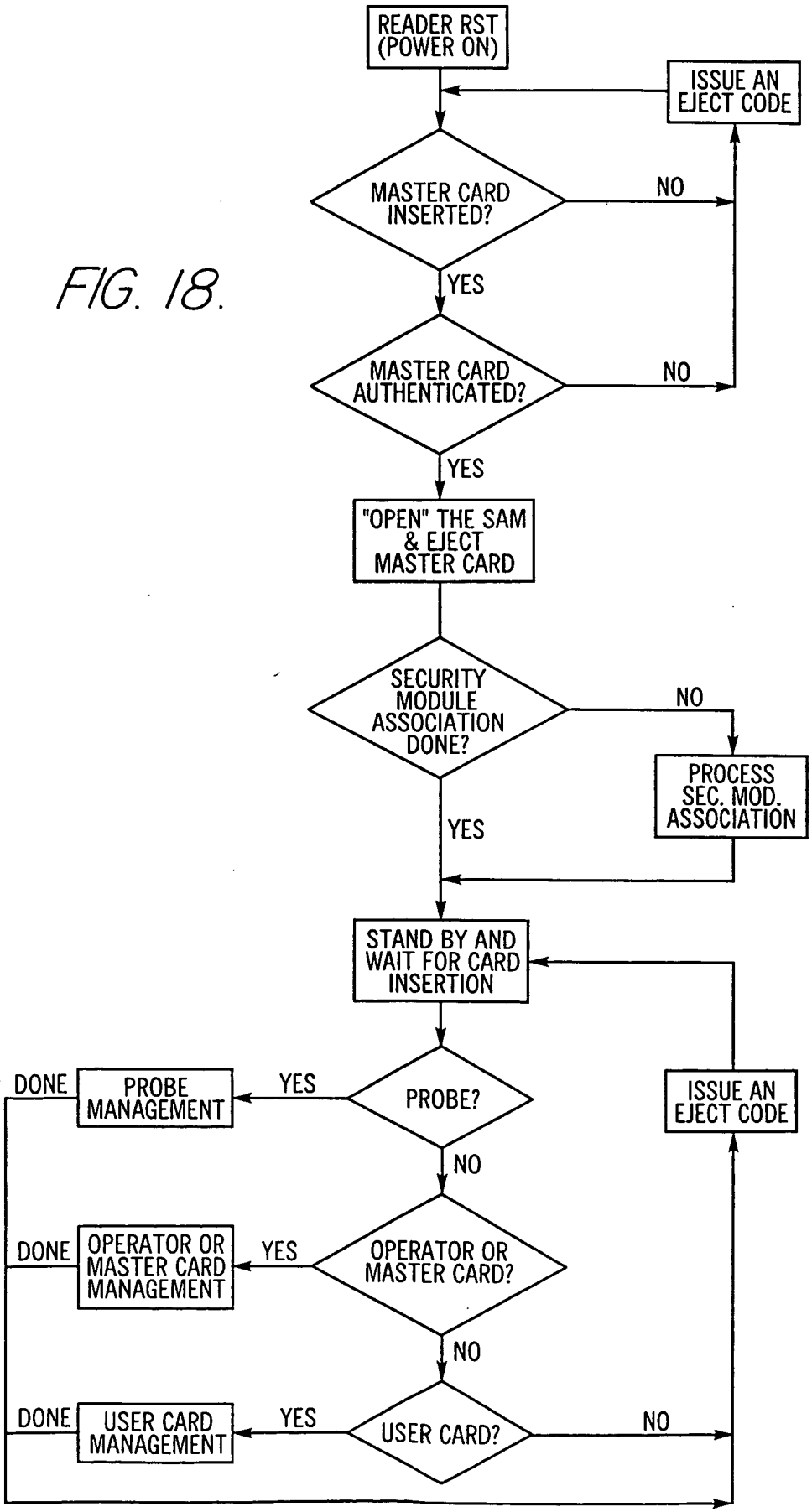

1700
1701
CARD
ISO CARD INTERFACE 1702
1705
READER
ISO CARD INTERFACE 1707
SM/ READER INTERFACE 1711
1710
SECURITY MODULE
SM/ READER INTERFACE 1712
SAS or SDS 1708
1715
GAME
SAS or SDS 1718

FIG. 17.

FIG. 18.


READER RST (POWER ON)
ISSUE AN EJECT CODE
MASTER CARD INSERTED?
NO
YES
MASTER CARD AUTHENTICATED?
NO
YES
"OPEN" THE SAM & EJECT MASTER CARD
SECURITY MODULE ASSOCIATION DONE?
NO
PROCESS SEC. MOD. ASSOCIATION
YES
STAND BY AND WAIT FOR CARD INSERTION
DONE
PROBE MANAGEMENT
YES
PROBE?
ISSUE AN EJECT CODE
NO
DONE
OPERATOR OR MASTER CARD MANAGEMENT
YES
OPERATOR OR MASTER CARD?
NO
DONE
USER CARD MANAGEMENT
YES
USER CARD?
NO

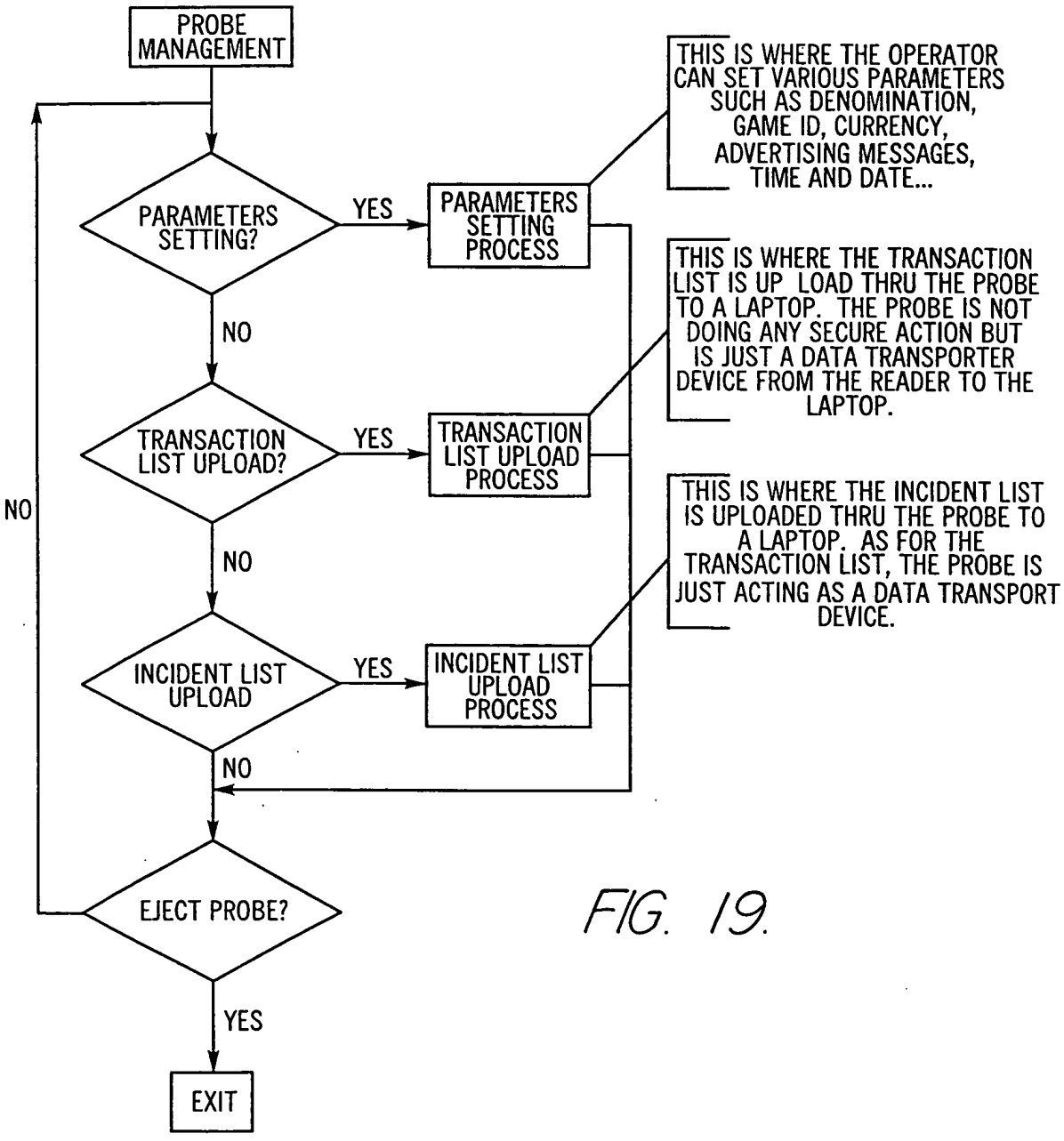

PROBE MANAGEMENT
PARAMETERS SETTING?
YES
PARAMETERS SETTING PROCESS
NO
TRANSACTION LIST UPLOAD?
YES
TRANSACTION LIST UPLOAD PROCESS
NO
INCIDENT LIST UPLOAD
YES
INCIDENT LIST UPLOAD PROCESS
NO
EJECT PROBE?
NO
YES
EXIT
THIS IS WHERE THE OPERATOR CAN SET VARIOUS PARAMETERS SUCH AS DENOMINATION, GAME ID, CURRENCY, ADVERTISING MESSAGES, TIME AND DATE...
THIS IS WHERE THE TRANSACTION LIST IS UP LOAD THRU THE PROBE TO A LAPTOP. THE PROBE IS NOT DOING ANY SECURE ACTION BUT IS JUST A DATA TRANSPORTER DEVICE FROM THE READER TO THE LAPTOP.
THIS IS WHERE THE INCIDENT LIST IS UPLOADED THRU THE PROBE TO A LAPTOP. AS FOR THE TRANSACTION LIST, THE PROBE IS JUST ACTING AS A DATA TRANSPORT DEVICE.

FIG. 19.

FIG. 20.

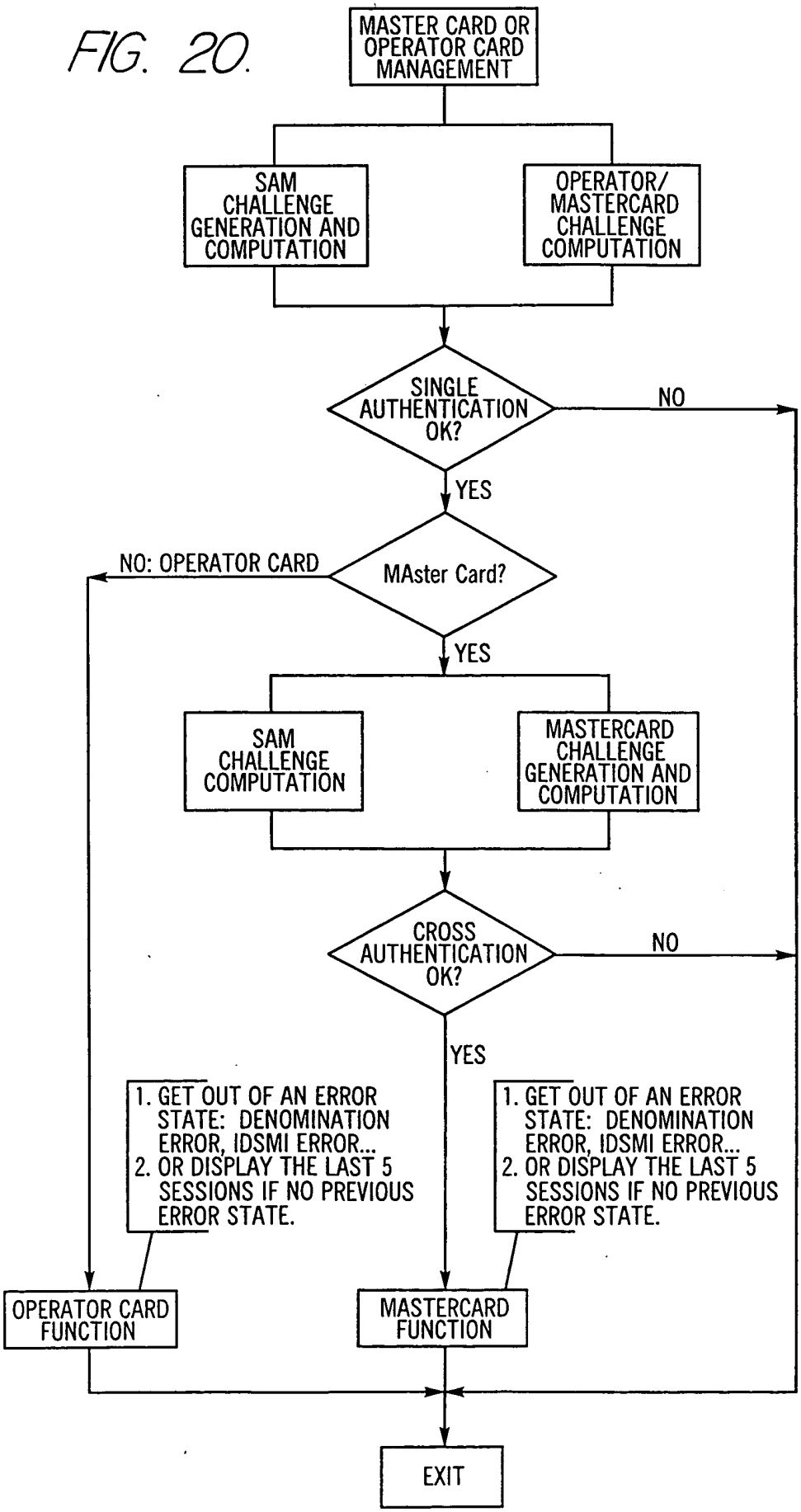
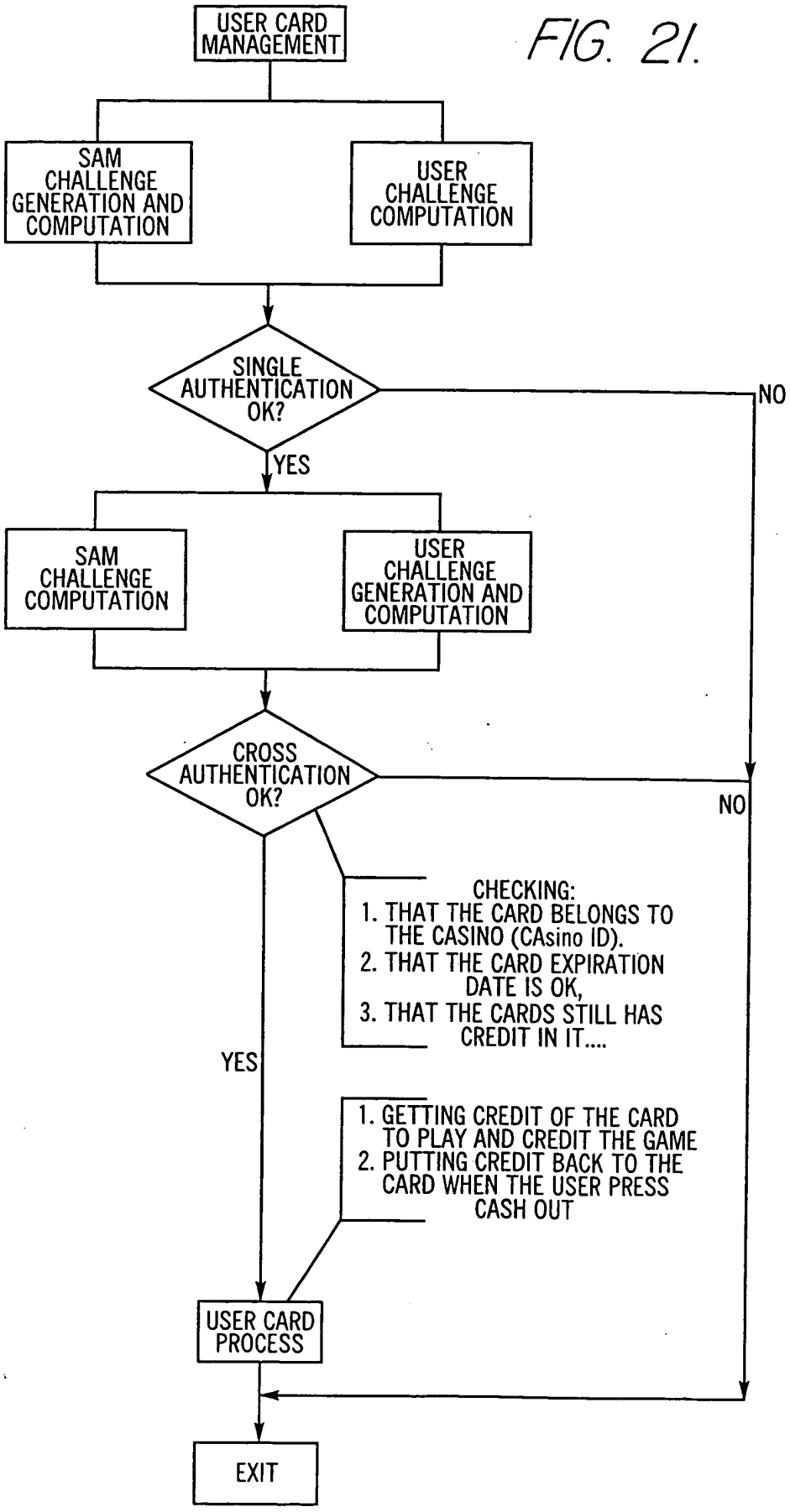

MASTER CARD OR OPERATOR CARD MANAGEMENT
SAM CHALLENGE GENERATION AND COMPUTATION
OPERATOR/ MASTERCARD CHALLENGE COMPUTATION
SINGLE AUTHENTICATION OK?
NO
YES
NO: OPERATOR CARD
MAster Card?
YES
SAM CHALLENGE COMPUTATION
MASTERCARD CHALLENGE GENERATION AND COMPUTATION
CROSS AUTHENTICATION OK?
NO
YES
1. GET OUT OF AN ERROR STATE: DENOMINATION ERROR, IDSMI ERROR...
2. OR DISPLAY THE LAST 5 SESSIONS IF NO PREVIOUS ERROR STATE.
1. GET OUT OF AN ERROR STATE: DENOMINATION ERROR, IDSMI ERROR...
2. OR DISPLAY THE LAST 5 SESSIONS IF NO PREVIOUS ERROR STATE.
OPERATOR CARD FUNCTION
MASTERCARD FUNCTION
EXIT

FIG. 21.


USER CARD MANAGEMENT
SAM CHALLENGE GENERATION AND COMPUTATION
USER CHALLENGE COMPUTATION
SINGLE AUTHENTICATION OK?
NO
YES
SAM CHALLENGE COMPUTATION
USER CHALLENGE GENERATION AND COMPUTATION
CROSS AUTHENTICATION OK?
NO
CHECKING:
1. THAT THE CARD BELONGS TO THE CASINO (CAsino ID).
2. THAT THE CARD EXPIRATION DATE IS OK,
3. THAT THE CARDS STILL HAS CREDIT IN IT....
YES
1. GETTING CREDIT OF THE CARD TO PLAY AND CREDIT THE GAME
2. PUTTING CREDIT BACK TO THE CARD WHEN THE USER PRESS CASH OUT
USER CARD PROCESS
EXIT